2740

OTS:

JPRS: 2740

1 June 1960

SOVIET CONSTRUCTION

No. 12

SELECTED TRANSLATIONS

Distributed by:

OFFICE OF TECHNICAL SERVICES
U. S. DEPARTMENT OF COMMERCE
WASHINGTON 25, D. C.

Price: $0.75

U. S. JOINT PUBLICATIONS RESEARCH SERVICE
205 EAST 42nd STREET, SUITE 300
NEW YORK 17, N. Y.

JPRS: 2740

CSO: 2800-N/12

SOVIET CONSTRUCTION

NO. 12

SELECTED TRANSLATIONS

Introduction

This is a serial publication containing selected translations on construction in the Soviet Union. This report contains translations on subjects listed in the table of contents below.

Table of Contents

1. The Lumber Industry in the Seven-Year Plan

/This is a translation of an article written by V. Galas'yev in Planovoye Khozyaystvo (Planned Economy), No. 11, Moscow, November 1959, pages 48-54./

...As a result of a set of measures conducted in the postwar years, lumber establishments have become converted into highly mechanized enterprises staffed with permanent cadres of skilled workers. The volume of logging operations in the country (not counting the logging done by the kolkhozes and rural soviets) has risen from 177 million m^3 in 1956 to 325 million m^3 in 1958, or 1.8 times. The increase in the volume of logging operations has been accompanied by an increase in the volume of output of the timber-processing enterprises. The products of sawmill materials, e. g., climbed from 43 million m^3 in 1950 to 69.5 million m^3 in 1958, or 1.6 times, the production of plywood has correspondingly risen from 657,000 to 1,228,000 m^3 or 1.9 times, and the output of paper -- from 1.2 to 2.2 million tons or 1.8 times.

However, notwithstanding the signal expansion in the volumes of its output, the forest industry still does not satisfy completely the growing needs of the country for timber and, especially, timber products. This is caused by the existing shortcomings relating to the geographical distribution of industry and the utilization of forest raw materials, and the discrepancies in the development of individual branches of the forest industry as well.

...The increase in the operations of the logging branch was not accompanied by an increase in the operations of the timber-processing branch and has thus led to an inefficient utilization of the country's forest raw materials. A large amount of wood wastes of logging operations and industry is utilized mainly as fuel. The cleared forest areas are strewn with millions of cubic meters of low-grade wood and faggots. The amount of timber wastes in the forests, in the timber-processing enterprises, and in construction -- including the low-grade wood left on cleared forest areas -- totals over 100 million cubic meters annually. At present these wastes not only are uselessly forfeited but also cause considerable expense because of the necessity of collecting and burning them.

The prospects for the further development of the national economy of the USSR confront the forest industry

with the task of satisfying fully the country's needs for wood and wood products. This task can be solved in two different ways: one way is to expand the volume of logging operations while maintaining the existing structure of the production and consumption of wood in the country. In this case it would be necessary in 1965 to cut and haul 520 or 530 million m^3 of timber, and in 1975 -- not less than 700 or 750 m^3, i. e., more than twice as much as in 1958. Such an expansion of logging operations would incur enormous expenditures, and it would deteriorate further the abnormal situation characterizing the utilization of wood.

Therefore industry is facing the necessity of altering radically the structure of the production and consumption of forest materials, improving steeply the utilization of wood through the processing of wastes, low-grade wood and faggots, and economizing, as well, on the use of wood in industry and construction, without thereby increasing the developmental pace of logging operations. In Finland, e. g., the volume of logging has practically not increased at all in the past 20 years; nevertheless the production of sawmill materials and prefabricated houses increased by more than 50 percent, plywood -- by 40 percent, and pulp and paper goods -- by 25 percent. As much as 30 percent of all timber is processed on the basis of chemical technology.

...To manufacture one cubic meter of wood-shavings board it is necessary to process 1.5 m^3 of wood wastes or faggots. One cubic meter of wood-shavings board can replace in construction or furniture industry two to three cubic meters of sawmill materials or three to five cubic meters of standard lumber. In this connection, the savings in capital expenditures per cubic meter of that board will amount of 106 rubles, while the savings in the production costs of the board, compared with the production costs of sawmill materials, will amount to 225 rubles.

...The materialization of the complex whole of measures relating to the construction of broad-gauge railroad lines, logging enterprises, and timber-processing enterprises, and the industrial utilization of forest wastes and low-grade wood as well, will make it possible in the course of the seven-year period to increase considerably the output of the forest, paper and timber-processing industry.

The haulage of timber (not counting the logging done by kolkhozes) will rise from 227.7 million m^3 in 1958 to 277.5 million m^3 in 1965, or by 22 percent. At the same time, the volume of output of sawmill materials will rise from 69.5 million m^3 in 1958 to 95 million m^3, or by 37 percent in 1965.

The volume of output of furniture will rise from 7.5

billion rubles in 1958 to 18 billion rubles in 1965 or 2.4 times. For this purpose it will be necessary to build over 100 new furniture enterprises equipped with up-to-date automation and facilities.

The output of plywood will climb from 1,230,000 m^3 in 1958 to 2,150,000 m^3 in 1965, or by 74 percent. To attain such an increase in output it will be necessary to build plywood plants with a combined output capacity of not less than a million cubic meters of plywood annually.

During this seven-year period the production of wood-fiber and wood-shavings board will be substantially advanced. According to target figures, the volume of output of wood-shavings board will be increased from 30,000 m^3 in 1958 to 3.5 million m^3 in 1965, or 117 times, while the output of wood-fiber board will be increased from 35 million m^2 in 1958 to 300 million m^2 in 1965, or eight and one-half times.

Calculations show that the utilization of such types of millboard will make it possible during the seven-year period to save about 55 million m^3 of lumber and 800 million rubles worth of capital investments. Moreover, the resulting savings in production costs will total over three and one-half billion rubles.

2. Means for Improving the Economic Effectiveness of the Use of Prefabricated Reinforced Concrete Elements in Construction

/This is a translation of an article written by V. Malyugin in Ekonomika Stroitel'stva (Economics of Construction), No. 2, February 1960, pages 8-17./

The basis of modern industrialized construction is precast prefabricated concrete.

In 1958 the Government of the USSR had stipulated the goal of raising the total nationwide output of precast reinforced concrete structures and parts to 22 million m^3 in 1959, 28 million m^3 in 1960, and 44 million m^3 in 1965, in which the output of prestressed structures alone should correspondingly climb to 3.3, seven, and 11 million m^3, respectively.

This 2.5-fold increase in the output of precast reinforced concrete by the end of the Seven-Year Plan as compared with 1958 will make it possible in 1965 to consume 220 m^3 of prefabricated concrete structures for every million rubles of construction and installation operations, as compared with 148 m^3 in 1958. The output of prestressed reinforced concrete structures will increase particularly. The share of the prestressed structures in the total volume of the output of precast reinforced concrete should climb to 25 percent, which will improve signally the economic results of the introduction of precast reinforced concrete and further the continued progress of construction.

The output capacities of the precast reinforced concrete enterprises will be expanded by approximately 32 million m^3 during the seven-year period. Approximately 19 million m^3 of such concrete was produced in our country in 1958. By way of comparison, let us recall that in 1957 the output of this concrete in the United States amounted to 10 million m^3, in England, three million m^3, and in France, 0.6 million m^3. In 1958 our precast reinforced concrete industry has greatly outdistanced the analogous industry in the United States, England and France with respect to the level of output as a whole, per capita output, and pace of development.

The widespread use of precast reinforced concrete in our country has become the principal developmental trend of construction engineering. Thus, while in 1953 the share of prefabrication in construction amounted to only 20 percent, in 1958 it had reached 35 percent, and in 1965 it will reach 60 percent. In this connection in 1958 the share of pre-

fabrication in housing construction amounted to 56 percent, and in industrial construction -- only 23 percent.

The use of precast reinforced concrete in 1958 per million rubles of construction and installation operations amounted to 230 m^3 in housing construction and about 100 m^3 in industrial construction.

For the purpose of a steep rise in technological progress and industrialization of industrial construction, plans exist for raising in 1965 the average norm of consumption of precast reinforced concrete to 165m^3 per million rubles of industrial construction and installation operations, and for increasing in 1965 the volume of output of precast reinforced concrete structures for industrial construction alone to 19 million m^3.

The use of precast reinforced concrete components and structures will ensure a signal decrease in the labor input of the operations on the construction site. At present the labor input required by monolithic reinforced concrete averages five man-days per cubic meter of reinforced concrete. In comparison, the total labor input required by the offsite fabrication of one cubic meter of precast reinforced concrete structures in an industrial plant and the installation of these structures on the construction site amounts to only about 2.6 man-days. Consequently, about 2.4 man-days are saved for every cubic meter if precast reinforced concrete is used on the construction site instead of monolithic concrete.

Such a substantial saving in labor expenditures is to be explained by the fact that monolithic reinforced concrete structures require a more laborious framing, the construction of supporting structures, and considerable expenditures of labor on the preparation and installation of reinforcement and on the handling of the laid concrete.

Calculations show that the supplanting of monolithic reinforced concrete by precast reinforced concrete in 1956 will result in reducing by 300,000 workers employment in construction (provided the volume of construction and installation operations will expand considerably).

In connection with the conduct of a number of measures intended to economize on the consumption of wood and to replace it by other materials, mostly precast reinforced concrete, a considerable reduction in the norms for the consumption of structural timber has been achieved in recent years.

While in 1954 the amount of wood consumed per million rubles worth of construction and installation operations in construction as a whole was 660 m^3, in 1958 this dropped to only 418 m^3 -- or 37 percent less.

The 1960 plan envisages a drop in the consumption of pound timber to 0.49 m^3 per square meter of dwelling area.

It should be noted that as a result of the replacement of wooden floors in residential and public buildings by precast reinforced concrete floors alone the total savings of wood in construction as a whole in 1960 will amount to about five million m^3 compared with 1958, and in 1965 -- about eight million m^3, in terms of round timber.

Calculations indicate that, in connection with the expansion in the volume of construction based on precast reinforced concrete and the emphasis on its use, the demand for forest materials for construction in 1960 will decrease 26.5 million m^3. The wood thus saved will be reassigned to satisfy other needs of the national economy.

One of the principal ways of saving steel in the components of buildings and structures is to replace steel components by precast reinforced concrete components. Calculations show that one ton of steel structures can be replaced by two and one-half cubic meters of precast reinforced concrete structures, and that such replacement, when practiced for a one-story industrial building of the machine building industry, makes it possible to halve steel consumption,

The use of precast reinforced concrete instead of steel structures yields the following savings of steel: 50-60 percent in columns; 50-55 percent in girders, 50-60 percent in bearing spans, and 55-65 percent in crane beams.

For one-story buildings with a span of 24 meters, about 80 kg of steel are needed per square meter of floor area if steel structures are used, whereas the replacement of these structures by precast reinforced concrete ones will reduce the steel requirement to about 30 kg per square meter of floor area. The use of precast reinforced concrete framework in lieu of a steel framework in multi-story industrial buildings, in a large number of cases, reduces the consumption of steel by 70 percent. The replacement of steel structures by reinforced concrete ones not only reduces the consumption of steel but also increases the rigidity and stability of structures. Calculations show that 1.5 million tons of metal will be saved during the seven-year period as a result of such replacement.

Now when the volume of precast reinforced concrete construction during the 1959-1965 seven-year period will exceed 240 million m^3, the problems of the economics of precast reinforced concrete acquire a major national-economic importance.

If we consider that the mean wholesale price of one cubic meter of precast reinforced concrete in the country as a whole amounted to 424 rubles in 1958, then the value of the entire marketable output of the precast reinforced

concrete industry during the seven-year period will total over 100 billion rubles. At such a scale of the output of precast reinforced concrete in our country, a one-percent reduction in wholesale prices for this concrete will amount to over one billion rubles for the seven-year period as a whole.

The Plan for 1959-1965 provides for the fabrication of prestressed precast reinforced concrete structures on the scale of over 59 million m^3. It is known that when prestressed structures are used instead of the ordinary precast reinforced concrete, the savings of steel reach 50 percent, and of concrete, 10 percent. This signifies the possibility of saving 5.9 million m^3 of concrete and about 1,180,000 tons of steel during the seven-year period. In this connection, the weight of structures will decline 15 percent, and the erection of buildings will be speeded up.

At such considerable savings, every additional percent of increase in the volume of output of prestressed precast reinforced concrete will serve to save 59,000 m^3 of concrete and about 12,000 tons of steel.

* * *

Let us consider certain problems relating to an improvement in the effectiveness of the use of precast reinforced concrete in the foundations and floors of residential and public buildings and in the walls and columns of industrial buildings.

At present various types of foundations (rubble, rubble-concrete, concrete, and reinforced-concrete) are used in the construction of multi-story residential and public buildings.

Table 1 cites the indexes of labor input and estimated cost of foundations (not counting the overhead expenses and planned accumulation).

It can be seen from the above indexes that the reinforced concrete are the most economical ones. The labor input required to lay them on the construction site is, compared with rubble foundations, more than 2.5 times lower, and their cost -- 28 percent less, so that as a result the use of reinforced-concrete foundations has become widespread on construction sites.

However, in a number of cases, these types of foundations prove to be expensive and insufficiently effective because of their laminated design. In residential and public buildings, as experience shows, it is often more effective to lay foundations of reinforced concrete piles instead of laminated foundations.

Table 1

Index	Unit of Measurment	Type of Foundation: Rubble	Rubble-Concrete	Concrete	Reinforced Concrete
Labor Input in Laying 1 m^3 of Foundations After the SNiP /Construction Specifications and Regulations_7	man-days / percent	0.8 / 100	0.76 / 95	0.74 / 92	0.64 / 80
Ditto, per Running Meter of Foundations	man-days / percent	1.5 / 100	1.2 / 80	1.17 / 76	0.59 / 39
Estimated Cost in 1955 Prices, of 1 m^3 of Foundations	rubles	155	174	182	229
Estimated Cost, in 1955 prices, of one running meter of foundations	rubles / percent	291 / 100	274 / 94	283 / 97	210 / 72

...The use of pile foundations yields a considerable economic effect: earthwork operations are then reduced four to 13 times, concrete-handling operations are cut more than one-half, and the haulage of loads is reduced three to five times, compared with the analogous operations required in the laying of laminated foundations; the cost of pile foundations is generally 10-15 percent less, and their weight, 30-50 percent lower. The total weight of a building is reduced approximately 10 percent when piles are used.

...In construction practice at present, one-, two- and three-layer wall panels are used. Table 2 cites the technical and economic indexes per square meter of walls of

industrial buildings of brick and one-layer panels with various heat insulating materials.

Table 2

Index	Unit of Measurement	Red Brick Brick Wall	Panels: Reinforced Concrete (Insulator: Non autoclave Gas Concrete)	Panels: Reinforced Concrete (Insulator: Non autoclave Foamed Concrete)
Grade of the Reinforced Concrete Used in Panels		--	300	200
Consumption of Cement	kg/m^3	38	74.0	68.5
Consumption of Steel	"	1.9	6.8	4.7
Labor Expenditures on the Site	man-day	0.64	0.16	0.15
Weight	kg	773	331	289
Estimated Cost (in basic prices)	ruble	115.8	106.0	99.6

From the above-cited figures it can be seen that reinforced-concrete panels are 8-13 percent cheaper than brick walls and, in the event of the use of these panels, the labor expenditures on the site are four times lower and the weight of the walls is two to two and one-half times lower. The large wall panels of the walls of industrial buildings fabricated from ordinary reinforced concrete are heavy and have a high conductivity of heat and noise, which is their principal drawback. The considerable weight of these large panels complicates greatly their installation, especially when an industrial shop has several aisles.

Therefore, in addition to expanding the output of wall panels of heavy concrete, it is necessary to expand the output of wall panels of lightweight concretes. The use of lightweight concretes in panels makes it possible to lighten considerably the over-all weight of a building structure, and the thermotechnical properties of lightweight concrete panels provide a possibility for reducing thethickness of

the exterior walls of industrial buildings.

The lightening of the weight of the structures of industrial buildings results in reducing the volume of the foundations and the load they bear, and in reducing as well the expenditures on transport, laying of foundations, etc.

Table 3 cites the technical and economic indexes per square meter of the walls of industrial buildings constructed of brick and of reinforced gas concrete, respectively.

Table 3

Index	Unit of Measurement	Wall Type	
		Reinforced Gas Concrete Panels	Red-Brick Wall
Consumption of Cement	kg/m^3	38	53.6
Consumption of Steel	"	1.9	4.45
Labor Expenditures	man-day	0.15	0.64
Weight	kg	253	773
Cost (in 1955 basic prices, taking into account overhead expenses and planned accumulation on the scale of 20 percent)	ruble	90.6	115.8

From the data in Table 3 it can be seen that the use of walls of reinforced gas concrete panels serves to reduce the on-site labor expenditures to one-fourth in comparison with the use of brick walls, and that the wall weight then is two-thirds lower and the estimated cost drops 22 percent.

At present construction basically employs three types of precast reinforced concrete columns: with rectangular, I-beam, and "dvukhvetvevyy" /H-beam?/ cross sections. The widespread use of precast reinforced concrete columns in lieu of steel ones reduces the consumption of metal. The introduction of perfected forms of reinforced concrete columns into construction ensures a reduction in the consumption of concrete and reinforcement and in construction costs.

Table 4

Type of Column	Height in Meters	Weight in tons	Volume of Concrete in m^3	Cost in Rubles f.o.b. Plant	Cost in Rubles On-Site Assembling	Total Cost, Excluding Overhead Expenses and Planned Accumulation
Column with Rectangular Cross Section	13.75	9.8	3.93	1,858	377	2,235
Column with I-Beam Cross Section	13.75	7.32	2.93	1,749	281	2,030
Column with H-Beam Cross Section	13.75	6.45	2.58	1,656	247	1,903

...Table 4 cites the technical and economic indexes of various types of columns with identical loads, spans and height.

It follows from the data in Table 4 that columns with I-beam cross section are, in comparison with columns with rectangular cross section and same bearing load, more economical with regard to consumption of concrete (26 percent less) and cost (nine percent less), while for columns with H-beam cross section such economy rises to 35 and 15 percent, respectively. A further reduction in the costs of columns can be achieved mainly as a result of improvements in the shape of columns, such that the volume of concrete and steel in the columns would decrease.

...An analysis of the types of floors made of various types of precast reinforced concrete components show wide differences in their consumption of concrete and steel and

in the labor input required by their fabrication and installation. Thus, the consumption of steel varies from 2.25 to 9.4 kg/m^2. The lowest consumption of steel is in the prestressed floorings and slabs, and the highest -- in the slabs and panels with welded reinforcement.

Table 5 cites comparative figures on steel consumption in ordinary and prestressed floor panels with oval cavities used in housing construction in Leningrad.

Table 5

Type of Panel	Normed Load in kg/m^2	Steel Consumption					
		Ordinary Reinforcement		Prestressed Rod Reinforcement "St. 5" (Hardened)		Prestressed High-Strength Profiled (5-mm) Wire	
		kg	%	kg	%	kg	%
BP-1, measuring 220x1,900 x6,200 mm	600	64.4	100	46.7	70.0	24.3	37.8
BP-2, measuring 220x990x 6,260mm	600	58.3	100	37.7	64.5	21.3	36.6
BP-2u, measuring 220x990x 6,260 mm	900	75.1	100	53.6	71.2	27.0	36.0
PB-201, measuring 220x990x 5,860 mm	600	48.0	100	31.8	66.2	20.5	42.7

Consequently, on replacing conventional floor panels by prestressed ones (at the same normed loads) it is possible to reduce steel consumption by 30 percent when using prestressed hardened "St.5" steel, or by 65 percent when using high-strength profiled wire....

3. Kazakhstan Construction Industry in 1959-1965

/This is a translation of an article written by A. V. Plotnikov in Izvestiya Akademii Nauk Kazakhstanskoy SSR (News of the Academy of Sciences Kazakhstan SSR), No. 2, November, 1959, pages 14-21./

...The construction organizations of Kazakhstan maintain an improper practice: every one of them endeavors to create its own production base, often even at the risk of resorting to cottage-industry methods. This also pertains to the production of reinforced concrete elements. As a rule, such production bases operate unsatisfactorily, produce building materials of low quality and high cost, and do not produce enough to ensure construction sites with these materials.

To a large degree this can also account for the insufficient production of precast reinforced concrete in the republic. The supplies of this concrete to construction sites in Kazakhstan in 1958 totaled approximately 88 m^3 per million rubles of construction and installation operations compared with 130 m^3 for the USSR as a whole and as much as 400 m^3 in the leading construction organizations of Moscow, Leningrad, Kiev, and others.

The dispersion of reinforced concrete plants among various organizations, construction trusts, and administrations is also reflected in the scope of these plants; fundamentally they are not of large capacity, they are unspecialized and burdened with the most variegated assignments and production profiles. As a result of all this, the output of prestressed reinforced concrete in the republic does not exceed two percent of the total volume of output of reinforced concrete. The cost of precast reinforced concrete in Kazakhstan's enterprises is high -- in the "Sokolovrudstroy" and "Pavlodarstroy" trusts one cubic meter of that concrete costs 550-560 rubles, and in the "Dolinskshakhtstroy" Trust it costs 490 rubles. Whereas in the pace-setting enterprises of the country this cost has been reduced to 330-270 rubles. This renders imperative certain tasks regarding the improvement in the organization of Kazakhstan's construction industry, so as to ensure a complete and timely fulfillment of the tasks of capital construction.

Primarily, it is necessary to expand considerably the output of precast reinforced concrete. The target figures of the Seven-Year Plan provide for quadrupling the output

of that concrete in 1965 compared with 1958, and raising the volume of output of precast reinforced concrete structures and parts in 1965 to three million m^3 and increasing the supply of that concrete to the construction sites by the end of the seven-year period -- to 240 m^3 per million rubles of construction and installation operations, i.e., nearly tripling that supply compared with 1958. The investments in the development of the production of precast reinforced concrete in 1959-1965 will total 1.2 billion rubles. A number of new plants and open-air yards with an aggregate output capacity of 2.6 million m^3 of reinforced concrete products will be constructed. Also organized will be the use of reinforced concrete as material for the production of mine supports, poles of electric transmission and communications lines, railroad ties, etc. However, the share of the output of prestressed concrete in the total volume of the output of precast reinforced concrete will be approximately 25 percent, and in individual rayons still less. The production of reinforced concrete planned by the administrative economic rayons is not in accord with the volume of capital investments. This will affect the success of the realization of capital investments and fulfillment of plans of construction operations in the republic's rayons. It is necessary to coordinate better the relationship between the production of precast reinforced concrete and the volume of capital investments according to rayons and to eliminate the existing discrepancies, and to increase, as well, the share of the output of prestressed concrete in the total volume of the output of precast reinforced concrete.

...The output of cement in Kazakhstan will increase considerably. It is expected that about one and one-half billion rubles will be invested in the development of the republic's cement industry in 1959-1965. Compared with 1958 the output of cement in 1965 will increase 6.2-fold against an increase of 2.2 to 2.4 times for the USSR as a whole. The supply of cement to Kazakhstan's construction in 1965 will amount to approximately 390-400 tons per million rubles of construction and installation operations, or -- approximately -- more than three times as much as in 1958.

...In the forthcoming seven-year period, to fill the gaps existing between the supply and demand of building materials in Kazakhstan, 10.7 billion rubles or twice as much as was invested in 1952-1958 will be assigned for the development of the building materials and construction industries. Plans exist for a drastic increase in the present volume of output of various building materials and for the

organization of the production of new types of building materials such as roofing materials, facing ceramics, faience, asbestos-cement pipe, mineral wool, reinforced concrete pipe, linoleum, Linkrusta, window glass, etc. The supplies of building materials to construction in the republic will be substantially increased. In 1965 these supplies will rise as follows for every million rubles of construction and installation operations: wall materials -- 260,000 units of nominal brick compared with 114,000 units of structural brick in 1958; lime -- 63 tons compared with 24 tons in 1958; and structural gypsum -- as much as 20 tons against four tons in 1958.

The Seven-Year Plan envisages the activation of the Dzhambul Gypsum Plant and the construction of a large gypsum plant in Karaganda with an output capacity of six million m^2 of dry gypsum plastering, one million m^2 of gypsum products, and 35,000 tons of marketable gypsum. In the seven-year period the capacities for the production of gypsum will be enlarged nearly sevenfold and raised to 300,000 tons in 1965. Large quarries with an aggregate output capacity of the order of 750,000 tons will be established for extracting gypsum stone.

The output of lime in the republic will be increased and raised to 900,000 tons in 1965. This increase will be achieved by systematizing the production in the existing plants, and building large lime shops in cement plants and silica-brick plants.

The extraction and processing of nonmetallic mineral raw materials in 1965 will be raised to 17.2 million m^2 /m3/. The existing quarries will be modernized, and new ones will be built in all the economic administrative rayons of the republic, for an aggregate output capacity of 15.2 million m^3. Plans exist for investing as much as 800 million rubles in the development of the republic's nonmetallic mineral raw materials industry during the seven-year period, for establishing large regional mechanized quarries for the processing of nonmetallic mineral raw materials for the needs of all regional construction sites and other users in the individual rayons.

It is expected that over 800 million rubles will be expended on the development of Kazakhstan's asbestos-cement industry in the seven-year period. The Dzhetygarinskiy Asbestos Combine will be opened and subsequently it will serve as the base for building slate plants in Karaganda, Semipalatinsk, Chimkent, and Pavlodar.

The Ekibastuz Quartz Sands Deposit is expected to serve as the base for erecting a large glass plant with an output capacity of 16 million m^2 of window glass and 145,000

units of various glass articles.

Considerable attention is paid in the Seven-Year Plan to problems of the organization of the production of asbestos-cement structures and components for housing construction. On the basis of the use of asbestos and cement, it is expected that plants for the fabrication of asbestos-cement structures and components for housing construction will be built. Such plants will presumably be located in Karaganda, Semipalatinsk and Alma-Ata.

The most decisive factor in the successful fulfillment of the construction program is wall materials. Such materials account for the lion's share of costs and volume among all other building materials used in housing construction. In 1965 construction in Kazakhstan will need a total of as much as 4,000 million units of nominal brick, but the republic's brick plant will be able to produce at most only 1,900 or 2,000 million units; the other 2,000 million units will have to be replaced by other building materials.

...In the seven-year period, it is expected that certain enterprises for the production of various building materials will be built on the base of the chemical industry. Thus, e.g., plans exist for activating enterprises for the production of linoleum -- four million m^2, Linkrusta -- 500,000 m^2, bathroom and plumbing fixtures -- 2,000 tons, laminated plastics -- one million m^2, and veneered doors -- 200,000 m^2. Considering the colossal scope of capital construction in Kazakhstan, the production of building materials on the base of the chemical industry should be developed more rapidly and on a broader scale....

4. USSR Cement Industry in 1959

/This is a translation of an article published in Tsement (Cement), No. 1, 1960, pages 1-4./

The first year of the Seven-Year Plan, providing for creating the material base for the transition to a communist society, constituted the onset of a new historic period in the development of the entire national economy of the USSR -- including also the cement industry.

In the past year (1959) the cement industry of the USSR had had to solve the tasks required of it by the new Seven-Year Plan -- to ensure as early as in that first year of the Seven-Year Plan a faster pace of growth in its production capacities and increase in its output of cement. Within such a short period as seven years it will be necessary to ensure an increase in cement output by nearly 50 million tons more than in 1958, while simultaneously improving all the technical and economic indexes of the industry.

These tasks were concretized in the State Plan for 1959 in the form of the tasks for the activation of new output capacities, which provided for augmenting the existing capacities by 21 percent as of the beginning of the new year; the volume of cement output was stipulated at 39 million tons or 5.7 million tons more than in 1958, which is tantamount to a 17.1-percent pace of increase.

Formerly such a pace of increase in output was foreign to the cement industry of the USSR. Thus, during the preceding seven-year period (1951-1958) the mean annual pace of increase in cement output amounted to 3.07 million tons, while in the prewar years the maximal increment in cement output was attained in 1936 on the scale of 1.4 million tons. One need only mention that the increase by 5.7 million tons in the cement output in 1959, as envisaged by the plan, equals the actual total output of cement in the last prewar year 1940.

To ensure such an increase in the output of cement, and further improvement in the quality of cement, the 1959 provided for increasing the output of clinker by 4.5 million tons or 19.2 percent more than in 1958, which called for a still higher pace of output of the final product.

To materialize such tasks in the cement industry of the USSR in 1959, the activation of new output capacities was accompanied by the conduct of measures for further technological improvements in the production processes.

These measures ensued from the Seven-Year Plan Directives of the 21st CPSU Congress and the Resolution of the June Plenum of the CC CPSU Concerning the Further Technological Perfecting of Production, Introduction of New Technology, and Over-all Mechanization and Automation of Production. The cardinal measures were as follows:

1. Modernization of rotary kilns in the Pikalevskiy, Krichevskiy, Kramatorsk, Chernorechensk, Sukholozhskiy, and "Proletariy" cement plants. The alteration of the design dimensions of these kilns and the installation of concentrators made it possible to increase their productivity 43 percent while reducing, at the same time, the unit rate of consumption of fuel for roasting clinker by 15-25 percent.

2. Installation of Cottrell filters (to liquidate the escape of dust) in rotary kilns, cement mills, coal preparing departments, and admixture drying department. Altogether in 1959, 68 such filters were activated and 132 others were in the stage of installation, to be completed in 1960. Of the total number of the activated Cottrell filters, 37 were installed in rotary kilns, 23 in cement mills, and seven in admixture drying departments.

3. Conduct of work to continue the renovation of the existing basic equipment (Shchurovskiy, Riga, "Spartak", and other plants), and to expand the existing shops as well ("Gigant", Bryansk, Nikolayevka, Kuvasay, N.-Troitskiy, Kaspskiy, and other plants).

4. Automation of the production processes. At the "Oktyabr" Cement Plant automation was introduced in the raw materials department, with automatic regulation of the fineness of grinding and humidity of the raw mixture. The automation of the feed of grinding mills according to their loading with material has become very widely employed.

The technical measures taken in 1959 were but a stage in a major project for the technological updating of production, which should evolve into a still broader stage in 1960.

In 1959 in the cement industry of the USSR six new technological lines with high-productivity rotary kilns were introduced in the following cement plants: "Gigant", Bryansk, Nikolayevka, Kuvasay, and Semipalatinsk, and one at the Belgorod Plant; and an expansion program was carried out in the existing cement plants in Yashkino, Spassk and Begovat, where large rotary kilns were introduced, and in the "Krasnyy Oktyabr", "Proletariy", Sukholozhskiy, and Kramatorsk plants, where short rotary kilns were activated.

This was accompanied by the completion of the work on activating four technological lines with large-capacity rotary

kilns in the Alekseyevka, Krasnoyarsk, Irkutsk, and Karadag cement plants, and, as well, technological lines with maximum-productivity rotary kilns in the Kuybyshev and "Bol'shevik" cement plants.

Out of the total number of cement plants 17 did not fulfill their yearly plan of output. The greatest underfulfillment of the output plan was allowed to occur at the Teploozerskiy (30.5 percent of the plan), Semipalatinsk (22.8 percent), Sukholozhskiy (20 percent) and Kuznetsk (10 percent) cement plants.

Such cement plants should be compared with plants like the Nikolayevka, Akmyansk, and Chimkent ones, in which additional new output capacities were activated in time and the fulfillment of the plan was assured both quantitatively and in terms of all qualitative indexes.

The best indexes of productive activity in 1959 were attained by the Belgorod, Sebryakovskiy, N.-Pashinskiy, Magnitogorsk, N.-Troitskiy, Dneprodzerzhinsk, Volkovysk, Rustavi, and certain other cement plants. The worker collectives of these pace-setting enterprises ensured the fulfillment of all the fundamental quantitative and technical and economic indexes of the yearly plan. The performance of these plants in 1959 has been characterized by: attainment of a high average grade of the produced cement, higher hourly productivity and efficiency of utilization of basic equipment coupled with observance of the established unit norms for the consumption of fuel and electrical energy and the cutting of expenditures per ruble of marketable output.

Notwithstanding the underfulfillment of the output plan in the plants which have been slow to introduce new output capacities, the cement industry of the USSR in 1959 had nearly attained the plan-intended increment in cement output, which made it possible to maintain the established pace of growth.

The conduct of measures to expand and renovate cement plants, the work on the technical improvement of technological processes, and the satisfactory production activity of a majority of the cement plants made it possible in 1959 to improve the principal technical and economic indexes, compared with 1958, for the cement industry of the USSR as a whole. Thus, the average grade of cement was "422" in 1959, against "415" in 1958, the mean hourly productivity per rotary kiln reached 14.7 tons, against 14 tons in 1958, and the mean efficiency of utilization of rotary kilns in terms of calendar time amounted to 0.88 /88 percent/.

The results of the operations of the domestic cement industry in 1959 might have been better had the stipulated deadlines for the introduction of new capacities been

observed and had the assigned capital investments been utilized timely and fully. Regarding these aspects, however, the 1959 plan was not fulfilled. The total capital investments in the cement industry were utilized only to the extent of 83 percent, and by the end of 1959 a number of new technological lines were not as yet activated. The reasons for this are to be sought in the same shortcomings as had taken place in the past years, to wit: insufficient concentration of material and technical means on new objects under construction and, as a consequence, shortage and incompleteness of equipment (particularly electric equipment), coupled with the continuing unsatisfactory organization of the conduct of construction and installation operations on a large number of construction sites.

In 1960 it will be necessary to improve the organization of the construction of new cement plants and of the expansion of active ones, so as to accelerate the activation of new output capacities in the current year and make adequate preparations for continuing this activation in the following years. The project-design and scientific-research institutes are obligated to ensure a timely provision of technical documentation and to provide the necessary technical assistance in the course of construction and installation operations, as well as in the course of mastering newly activated output capacities.

Considering that in 1960 new domestically produced high-productivity technological equipment will be for the first time installed and activated in the cement plants, machine builders, who had first designed and constructed that equipment, should actively join the workers of the scientific-research and project-design institutes of the cement industry in the installation, activation, and mastering of that equipment.

The sovnarkhozes preparing to open new plants urgently need to train in time the cadres with which to staff these plants. In addition to theoretical training, on-the-job practice training can be conducted in the plants whose technological processes and equipment are comparable to the processes and equipment planned for the new plants. This training should be conducted six months or a year prior to the opening of a new plant. Poor training of cadres causes complications in the process of the activation of a new plant and mastering of its equipment, and it leads as well to superfluous repairs and to delays in the activation of the enterprises.

As shown by the operational experience of the "Oktyabr'" Plant, which is described elsewhere in this issue, the systematization of the technological process improves substantially

the quality of the produced cement and raises all technical and economic indexes. Such unutilized potential exists in all cement plants. The second year of the Seven-Year Plan should be a year of resolute struggle for the observance of an iron discipline and fulfillment of all requirements posed by the technological process in both the large- and the small- capacity cement plants. It is necessary to put a stop to the practice of roasting an unprepared raw mixture in the kilns, and of violating other technological norms as well.

This year the already existing dust-coagulating installations are being complemented with a number of new ones requiring careful and competent maintenance. The plants should ensure such maintenance by setting up special servicing teams.

Lastly, the scientific-research and project-design institutes should, in collaboration with the plant collectives, provide a practical solution to the question of how to utilize the dust trapped by Cottrell filters from the waste gases of rotary kilns, and they should complete the series of experiments being conducted at the "Probeda Oktyabrya" Cement Plant with regard to the roasting of clinker in a suspended state, and carry out the utilization of slags as charge components in the Magnitogorsk and Yemanzhelinsk plants. It is necessary to explore the possibility of conducting this measure in other plants also, particularly in those which it is difficult to supply with the clay component (e.g., the Novo-Troitskiy Plant). The experience of the Sebryakovskiy and Krivoy Rog cement plants in the mechanization of labor-consuming operations and automation of the control and regulation of technological processes should be utilized insofar as possible in the same year in the other plants, so as to ensure a reduction in the expenditures of manual labor, improve working conditions, and to increase the degree of the rhythmicity and continuity of the technological process.

The cement industry is a huge consumer of electrical energy and therefore, pursuant to the circular of the CC CPSU concerning the efficient utilization of electrical energy in the national economy, the cementmakers should place primary emphasis on a careful inspection of their electric motors, elimination of discrepancies in their power ratings, and continual observance of a rational loading of these motors. This pertains primarily to /the motors of/ crushing and grinding assemblies, which are particularly energy-consuming, and for which optimal operating conditions should be determined.

It is necessary to take measures to improve the

deliveries to cement plants of spare parts, abrasives, lubricants, and refractories -- in the necessary variety, quality and quantity -- and to improve the observance of the related delivery deadlines. The supplying of plants with fuel and charge admixtures should be particularly well-organized; it is necessary to devote attention to the need of a timely supplying of the plants with precrushed gypsum.

The new year 1960 -- the second year of the Seven-Year Plan -- should be distinguished by new achievements in the development of the cement industry of the USRR.

The level of cement output should be raised to 45.5 million tons, which will include an increment of 6.7 million tons or 17.3 percent compared with 1959. The utilization of the creative initiative of the workers, engineers, and technicians of the cement industry will indisputably create conditions in which the 1960 plan will be fulfilled and overfulfilled. Only in a state like the USSR, where the fundamental national-economic goals are being attained with the broad and active participation of all workers, it is possible to reach such a pace of growth -- such an advance -- as is outlined before us by the Great Seven-Year 1959-1965 Plan.

5. On an Unbeaten Track: Scholars Discuss New Methods for Producing Cement

/This is a translation of an article written by V. Vladimirov in Stroitel'naya Gazeta (Construction Gazette), 21 February 1960, page 2./

Very great tasks are confronting the workers of the cement industry in the years of the Seven-Year Plan. This concerns not only the enormous growth of output, refurbishing of plants, broad introduction of automation and pace-setting technology, but also completely new methods of roasting and grinding of materials.

These problems are being solved by the country's multifarious scientific research organizations. The coordination of their efforts is in the hands of the Council on the Coordination of Scientific Research Activities under the NIITsement /Scientific Research Institute for Design and Planning of Cement Industry/ -- the main scientific research organization of the cement industry.

Recently this Council held its regular session. Considerable attention was devoted to one of the principal production problems -- obtaining melted cements.

The head of the NIITsement's Laboratory, V. F. Krylov, spoke on the years of labor devoted to obtaining melted portland-cement clinker from red-hot molten blast-furnace slags. In 1956 a special converter proposed by V. V. Serov was built in Tula. Last year 38 meltings were conducted at that installation and, for the very first time in history, high-grade melted cement clinker was obtained from blast-furnace slags under semi-industrial conditions. This cement clinker corresponds to grades "400"-"600".

At present the NIITsement is jointly engaged with the Gipronikel /State Institute for Design and Planning of Nickel Industry/ in the designing of a more economical melting assembly, to be constituted by a converter incorporated into a heat-recovery boiler. This assembly will operate at an extremely high efficiency. Its designed capacity will be for 12 tons of clinker an hour. In this connection it will provide enough steam and electrical energy to satisfy more than three times the needs of the installation itself.

The communication by the representative of the Urals Affiliate of the Academy of Construction and Architecture USSR, A. S. Feder, was listened to with special attention. As noted previously in the "Stroitel'naya Gazeta", melted

portland-cement clinker was also obtained in Chelyabinsk, in electric-arc furnaces, from molten ferrochrome slags.

The session of the Council approved the decision of the Ural cementmakers to build an industrial installation for obtaining melted cement.

The representatives of the NIITsement and the Urals Affiliate of the Academy of Construction and Architecture, when speaking of their experimental work, operated with tons of already obtained output. But it would seem that the representative of a young scientific research organization, the Azerbaydzhan NIITsement, A. N. Luginin, was in a different situation.

At that organization, the research was conducted in a laboratory kiln. Only 100 grams at a time were obtained. Nonetheless, the experiments of the Azerbaydzhan NIITsement are of enormous interest.

This concerns a comprehensive utilization of the raw material, the obtainment of high-grade clinker, and the simultaneous fuming of rare metals from the "tailings" -- the refuse of the raw material in plants of nonferrous metallurgy.

Essentially, the processing of shale slags into portland-cement clinker is a problem worked on both at the Giprotsement and at the Institute of Construction and Building Materials, Estonian SSR.

Lately, furnaces in which slag is eliminated in red-hot molten state are being worked out. Researches have shown that in a large number of cases, at a specific melting point, shale slags acquire the properties of portland-cement clinker without necessitating any admixtures. Thus, the possibility of a comprehensive utilization of combustible shales is being revealed.

The session of the Council on the Coordination of Scientific Research Activities had also discussed other major topics. This concerned the Yenakiyevka sintering fire-bars, the work on roasting clinker in the so-called fluidized bed. As was explained, the problems of the sintering fire-bars and of the fluidized-bed roasting of clinker have not hitherto been properly adjudicated at Sectional sessions. The Council recommended an intensification of the related research work and the convening, in the first half of the year, of a conference of the Sections, to be followed by the next session of the Council.

6. Important Conference of Ukrainian Cement Industry Workers

/This is a translation of an article written by D. Yageman in Stroitel'naya Gazeta (Construction Gazette), 11 March 1960, page 2./

Recently the Gosstroy and Gosplan of the Ukraine had convened in Khar'kov the Republic Conference of Workers of the Cement and Asbestos-Cement Industry and of the Project-Design, Scientific-Research and Construction Organizations of the Republic. A single problem was discussed: how to ensure the fulfillment of the plan of production and of the activation of new output capacities in the cement and asbestos-cement industry in 1960. A report was read by Deputy Chairman of the Gosplan UkrSSR N. Gorbas'.

Seasonal Difficulties Not An Obstacle

The results of the fulfillment of the plans of production for the first year of the Seven-Year Plan have enheartened the Conference's participants. In the past year over one and one-half thousand tons of cement and millions of roofing-tile units were produced in excess of the plan. In the past two years alone the increment in the output of cement in the Ukrainian Republic equaled the total output of cement of all Russia in 1913. The output per active equipment unit has been greatly increased. In January and February of the present year the plan has continued to be overfulfilled.

A major contribution to the preterm fulfillment of the goals of the Seven-Year Plan was made by industrial innovators. Much time was devoted by both the lecturer and the Conference's participants to the noteworthy experiments of these innovators.

The specialists of the Amvrosiyevka Cement Combine accomplished resounding successes in counteracting the effect of seasonal difficulties on production. In the last seven years they tripled the cement output at their Combine. In the fall and winter the quarries there operate no worse than in the best summer months. The hydraulic transport of slurry, which was introduced there, and the mechanization of quarry operations as well ensure a smooth, unbroken operation of plant assemblies. However, the stripping and extraction of marl during slushy or freezing weather continue as before to require strenuous effort. At present the miners are work-

ing on this problem. The first step -- a cautious one -- has already been made. It consists in the utilization of the depleted quarries as areas in which to deposit slurry in the summer and store it for the winter. It is the idea of the Ambrosiyevka experts that in winter they will merely repump the slurry from these reservoirs into plant slurry basins for secondary grinding and roasting. The first such reservoir -- small as it is -- in a reserve quarry, was filled last fall. This experiment has yielded promising results.

The Director of the Nikolayevka Cement Plant S. Sozanskiy, spoke on the renovation of its large rotary kilns.

"It is precisely the creative labors of the innovators, their successful explorations" -- he emphasized -- "that caused the Nikolayevka cementmakers last year to overfulfill their plan and their pledges and to provide three-fourths of their output in the "BTTs" /bystrotverdeyushchiy tsement -- rapid-setting cement/ grade."

The communication made by the operator of a cement grinding mill at the Kiev Plant, Comrade Bagriy, on the working methods used by the collective of that plant to reach and overreach its designed full capacity was listened to with great attention.

The advantages of the rotary kilns provided with concentrators were described by a rotary kiln operator from the Kramatorsk Cement Plant, Comrade Stoyushko.

* * *

Notable accomplishments have also been made by slateworkers.

"The output capacity of the Kiev Asbestos-Cement Products Combine has doubled in the past few years, and its output has increased more than fivefold. At the same time, its personnel has decreased by 36 persons. We received the benefits of the mechanization and automation of processes, and the supplanting of manual labor", said the Combine's Chief Engineer, Comrade Moshkovskiy. "The outlays on mechanization will be recouped within less than two years. What we have accomplished is still not enough. It is now necessary to convert to continuous-flow "conveyerized" operation. Then the effect will be still greater. We are following with interest the improvements being introduced in the "Cherneto" conveyer at the Belgorod Combine."

Are the Norms Normal?

The biggest worry of not only the Kiev but also the Khar'kov slatemakers is the high percentage of rejects, reaching five percent, and the short service life of the produced goods.

The norms for the consumption of the principal materials -- asbestos and cement -- insufficient as they are, are often still further lowered under the pretext of economy. Under such conditions it is not possible to assure products of high solidity, and hence also durability.

"The raising of the norms for the consumption of raw materials by two or three percent will make it possible to eliminate rejects, and it will at least double the service life of roofing materials. This is known by the workers of the Union and Republic Gosplans, and by institute workers, and yet no measures to revise these norms are being taken," charged the Director of the Khar'kov Plant, Comrade Naftulin.

Indisputably, the time is ripe for commencing to evaluate materials and products from the standpoint of their structural properties. The service life of slate roofing materials could be doubled and tripled by slightly increasing the consumption of cement and asbestos.

Enormous prospects for improving quality have been revealed for the cementmakers producing portland slag cement.

Experiments conducted by the collectives of the Dneprodzerzhinsk, Khar'kov and other plants in collaboration with the Yuzhgiprotsement /Southern State Institute for Design and Planning of Cement Industry/ have shown that if the clinker is ground separately and then reground together with an admixture of 50-70 percent of slag, then this will yield a portland slag cement that is hardly inferior to rapid-setting portland cement. The universal introduction of this new method is a most important task.

"This business is considered important only in words and on paper," complain the heads of many plants. "As for the assignment of funds, materials and equipment for the conduct of work on the conversion to this new method, both the Republic Gosplan and the Ukrkomplektoborudovaniye /Ukrainian Administration for Complete Sets of Plant Equipment/ take an extremely long time to operate effectively."

According to proposals, mills for the primary grinding of clinker should have already been installed last year, but in practice nothing has happened as yet in this matter.

A considerable potential for increasing output remains unutilized because of the absence of an independent base for the production of refractories. /The establishment of/ a special plant producing magnesite-chromite re-

fractories for cementmakers and glassworkers would have solved many problems. The additional output obtained through prlonging the service life of refractories in cement kilns and glass-founding furnaces would within two years recoup the expenses involved in building such a plant. This opinion of the Conference's participants, which is supported by calculations, cannot be ignored.

The Decree Exists, But ...

The tremendous increase in the output of cement and asbestos-cement products planned for the seven-year period would be inconceivable without an increase in output capacities, primarily through the expansion and renovation of the existing plants.

The related results for the past year are not heartening. Only two-thirds of the planned volume of new output capacities has been introduced. A large technological line was not installed at the Krivoy Rog Plant. Nor have adequate preparations been made for activating on a proper scale the output capacities for the current year.

The Conference's participants examined the difficulties that arose in Krivoy Rog. This situation arose mainly because the heads of the Construction Administration of the Dnepropetrovskiy Sovnarkhoz regarded the operations at the cement plant as a secondary matter and did not pay sufficient attention to them.

Here a share of the guilt is also borne by the workers of the Ukrainian Gosplan subordinated to Comrade Gorbas' -- and Comrade Gorbas' himself ultimately had to admit the errors committeed by the Gosplan UkrSSR. In the course of the year he had repeatedly canceled the assignments of funds and material-technical supplies to cement plants.

A decree of the State has included three objects of the Ukrainian cement industry among the 371 priority construction projects. These three objects are the Krivoy Rog, Novo-Zdolbunov, and Shebelinskiy plants.

The decree exists, but so far, as communicated by the Conference's participants, no radical improvement has occurred in the operations on these construction sites. It is known that for the particularly important construction projects the funds and materials should be assigned according to integral purpose and appraised not in terms of "millions" /consumption of materials per million rubles of construction and installation operations/

The Shebelinskiy Plant will, according to its project, become the world's largest cement-producing enterprise. And yet the situation on this construction project is lament-

able. Last year the plan of operations was upset. The project was not provided with hoisting and transporting machinery. The goals for January and February were only one-third fulfilled. The indifference of the heads of the Khar'kovskiy Sovnarkhoz is truly boundless.

The situation is not any better with regard to the construction of objects of the asbestos-cement industry. Here the business becomes really preposterous. Many heated words have been uttered about the heads of the Building Materials Administration of the Stalinskiy Sovnarkhoz. They started to litigate with the Yuzhgiprotsement /Southern State Institute for the Design and Planning of the Cement Industry/, and demanded that it should redesign the ceiling of an asbestos-cement pipe shop and replace the 13-meter reinforced concrete girders by metal ones. One result of this litigation was a considerable delay in construction.

Decidedly, in the fulfillment of the plan of the expansion of output capacities of the cement and asbestos-cement industry a major role belongs to designers, as has been pointed out by the Conference's participants. The demands presented to the workers of the Yuzhgiprotsement were not limited to an enumeration of various blueprints which were not issued in time; these demands also pertained to an increase in the prefabricability of structures on the basis of a resolute refusal to use monolithic /non-prefab/ reinforced concrete and brick masonry.

Builders and cementmakers have justifiably demanded that an end be put to particularized decisions, that the "retail sale of individual designs" be discontinued. It is necessary to have standard designs both for the cement plants and for the enterprises of the asbestos-cement industry.

* * *

The Conference in Khar'kov raised a number of pressing questions regarding the development of the base for extensive construction in the Ukrainian SSR.

At the Conference, higher socialist pledges for a preterm fulfillment of the plans of output and construction in the cement and asbestos-cement industry for the second years of the Seven-Year Plan were undertaken in the name of the enterprise collectives. The participants turned to all cementmakers, slatemakers, and builders with an appeal for fulfilling ahead of schedule the decisions of the 21st Congress of the Ukrainian CP concerning the primacy of development of these branches of industry.

#1386 -END-